MICHIGAN DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT

INTEROFFICE COMMUNICATION

TO: Kristi Zakrzewski, Project Manager,
Specialized Sampling Unit, Superfund Section, Remediation Division

FROM: John Bradley, Geologist,
Geological Support Unit, Superfund Section, Remediation Division

DATE: August 4, 2010

SUBJECT: Review of the "Final Design Report 12th Street Landfill",
Allied Paper Inc/Portage Creek/Kalamazoo River (API/PC/KR)
Operable Unit (OU) 4 12th Street Landfill Superfund Site

Introduction

The comments below are presented as a result of the review of the Final Design Report 12th Street Landfill (March 2010) (work plan). "Long-Term Environmental Monitoring" (Section 8) of the work plan and parts of the Performance Standards Verification Plan (Appendix D) of the work plan were provided for review and comment in July 2010.

Summary

The Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Part 201) Groundwater Surface Water Interface (GSI) monitoring criterion of "...monitoring the zones representative of the highest concentrations of contaminants" is identified in the work plan. However, the proposed method for vertical aquifer sampling (VAS), the proposed monitoring network design, and the well construction procedures identified in the work plan are not adequate for obtaining the data needed to meet this criterion.

To develop an adequate monitoring network at this site and to recognize the level of effort needed for design, it is not only necessary to understand the general requirements of Part 201, but also to consider the site specific characteristics of this site. These considerations include the different transport characteristics of the contaminants of concern (COC), the heterogeneous qualities of site formation material, and the potential change in groundwater flow with the removal of the Plainwell Dam.

A proper groundwater profiling at this site, especially in the shallow portion of the aquifer, must be performed in order to collect the data needed for designing an effective groundwater monitoring network capable of demonstrating compliance with Part 201. Due to site specific characteristics, a representative sampling and analysis of groundwater collected by five foot interval VAS is needed, at least for the upper 30 foot of aquifer. In addition, a shallow (water table) groundwater monitoring well should be required at each monitoring location at a minimum with additional wells installed if the

profile data indicate necessary. The design of the monitoring well network must account for the reality that polychlorinated biphenyls (PCBs) are most likely to be transported in the shallowest portions of the aquifer, and that nested wells may be necessary for monitoring the contaminants leaving this landfill.

Specific Comments

Aquifer Profiling

It is identified in the work plan that "The vertical aquifer sampling will be performed... using a Geoprobe or equivalent groundwater sampler." The work plan also indicates that "Vertical profiling will be performed at 10-foot intervals..." The technology typically used with this direct push system is the Geoprobe SP-15/SP-16 groundwater sampling system. This sampling system includes a maximum 41 inches of exposed screen. The use of this particular technology to collect groundwater samples at ten foot intervals is to collect a sample from a maximum of only 34% of the aquifer. Characterizing 34% of the aquifer does not provide a representative profile of the aquifer for determining contaminant distribution at this site. The proposed method will provide a data set that cannot be shown to identify "the zones of highest contamination" in the aquifer. Using this technology to collect samples at 5 foot intervals is to collect a sample from 68% of the aquifer. Although greater coverage (e.g., from using screened auger) would provide greater spatial coverage and increased confidence in the data set, the quality of data collected and used for determining well design will be significantly improved when compared to the proposed method.

The rational identified in the work plan for not implementing the typical 5-foot interval profile sampling is "*The 10 foot sampling interval is appropriate for sites with thick homogeneous aquifers and relatively simple geology and where the plume is expected to be thick and diffuse...*" Most of the constituents of concern (including PCB) should not be expected to exist as a thick and diffuse groundwater plume. Consistent with other landfill operable units associated with the Kalamazoo River Superfund Site, the transport of groundwater contaminated with PCBs is likely to exist in thin and distinct paths due (in part) to hydrophobic characteristics of such contaminants. Transport also tends to be relatively shallow; in part due to the upward head consistently identified along the Kalamazoo River regional discharge zone. The transport characteristics of other landfill constituents (e.g., certain volatile organic compounds [VOCs]) might result in thicker (i.e., five feet plus) and deeper vertical plumes that may not be so influenced by groundwater gradients. It must also be recognized that the aquifer formation materials beneath the landfill are not homogeneous, and include a full range of formation material textures including specific shallow units of varying sand and gravel (see API/PC/KR RI/FS Technical Memorandum 8 for the 12th Street Landfill OU, 1994 Geraghty and Miller).

A five-foot profile interval is recommended for adequately placing monitoring wells in the upper 30 feet of aquifer at this site. A 10-foot profile interval may be used at greater depths (instead of five foot intervals), unless contamination or the presence of low permeability units indicate otherwise.

Groundwater Analysis

It is indicated in the work plan that the groundwater samples collected from vertical aquifer sampling will be"...sent to a laboratory for analysis of volatile organic compounds (VOCs)". The long term monitoring program includes PCBs, dioxins, furans, metals, semi-volatile organic compounds (SVOCs), and VOCs. These contaminant classes can exhibit very different groundwater transport characteristics. The profile data from VOCs alone can not accurately determine the proper well construction for purposes of monitoring other such constituents. The groundwater collected from vertical aquifer profiling activities must be analyzed for the list of constituents that will be monitored long term.

During VAS, it is proposed that groundwater samples will be analyzed in the field for hydrogen ionization potential (pH), oxidation/reduction potential (ORP), dissolved oxygen, specific conductance, and temperature consistent with low-flow sample collection methods. Consistent with the Department of Natural Resources and Environment (DNRE) and the United States Environmental Protection Agency (USEPA) methods, low flow sampling must include the measurement and stabilization of turbidity. The monitoring and stabilization of turbidity must be included in the low-flow sampling used during the VAS and the long term monitoring program. Turbidity is not only useful for demonstrating representativeness; it can be very useful in understanding the formation characteristics and analytical results.

Monitoring Well Network Design

The proposed horizontal placement of monitoring well locations is similar to that used during the remedial investigation (RI). Similar to that in the RI, monitoring wells MW-101 and MW-109 are proposed as locations useful for determining upgradient conditions. Groundwater flow at the site is likely to have a much stronger easterly component due to the removal of the Plainwell Dam. If shallow groundwater flow directions change toward the east, MW-109 will not serve well as an upgradient well as it will be downgradient of the landfill. Concentrating the wells more toward the north and east of the landfill will place more wells in the downgradient portion of the landfill. It is specifically recommended to move MW-109 75 to 100 feet north of its currently proposed location to place it downgradient of a greater mass of landfill. Also, the MW-101 wells should be moved further from the landfill if intended for determining upgradient conditions.

The work plan indicates that 'The decision on which interval to screen will be made first based on the results of the VOC analysis." This is only appropriate for placing a monitoring well intended to monitor the VOCs identified at that interval, and not necessarily for determining placement for monitoring other constituents. Other contaminants of concern at this site, for example PCBs, do not have the same transport characteristics as VOCs, and can not be expected to exist in the same interval of aquifer. Part 201 GSI requires the monitoring of zones representative of the highest concentrations of contaminants which means that a monitoring well is to be placed to monitor the zones of highest contamination for each constituent identified. Different transport paths can be expected for different constituents, based on different transport

properties and source area distances. It will be very important in the design of the monitoring network to recognize that PCBs are most likely to be transported in the shallowest portions of the aquifer, and that nested wells may be necessary for monitoring the contaminants leaving this landfill.

The work plan indicates that water table wells be constructed with 10 foot screens. This type of well construction results in the monitoring of a zone of aquifer greater than five foot and up to 10 foot in length. This construction can result in significantly diluting the contaminant concentrations near the water table. It is recommended that water table wells be constructed with five foot screens set with one foot of screen above the normal water table or with seven foot screens set a minimum of two feet above the normal groundwater elevation. Other landfill OUs have shown that the uppermost portion of the aquifer is the most affected by landfill constituents. If the transport of PCBs at this site is consistent with that identified at the other OUs, a shallow groundwater monitoring well should be required at a minimum with additional wells installed if the profile data indicate necessary. Ten foot screens should not be used to monitor any interval of groundwater at this site.

Recommendations

Promote communications with the USEPA in an attempt to effectively address the concerns identified in this communication.

A five foot interval for VAS is recommended for adequately placing monitoring wells in the upper 30 feet of aquifer at this site. A 10-foot profile interval may be used at greater depths (instead of five foot intervals), unless contamination or the presence of low permeability units indicate otherwise.

A shallow groundwater monitoring well should be required at each monitoring location at a minimum with additional wells installed if the profile data indicate necessary.

It is recommended that water table wells be constructed with five foot screens set with one foot above the normal water table or with seven foot screens set a minimum of two feet above the normal groundwater elevation.

The groundwater collected from vertical aquifer profiling activities must be analyzed for the list of constituents that will monitored for in the long term, including PCBs, dioxins, furans, metals, SVOCs, and VOCs.

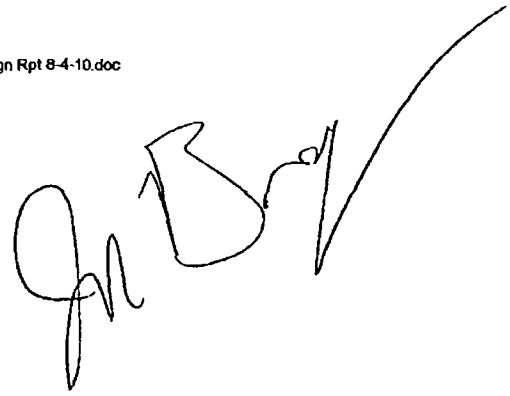
The monitoring and stabilization of turbidity must be included as a stabilization parameter in the low-flow sampling used during both the VAS and the long-term monitoring program.

The MW-109 monitoring location should be moved 75 to 100 feet north of its currently proposed location to place it downgradient of a greater mass of landfill.

The MW-101 wells should be moved further from the landfill if intended for determining upgradient conditions.

Request that the USEPA include the above comments and recommendations into the administrative record verbatim for the API/PC/KR OU4 12th Street Landfill Superfund Site.

cc: Jim Heinzman, Superfund Section
S:\RRDSFS_SITES\Allied Paper - Portage Ck - Kalamazoo R\DOCS\GSU\API PC KR OU4 Final Design Rpt 8-4-10.doc



Zakrzewski, Kristi (DNRE)

From: Bucholtz, Paul (DNRE)
Sent: Thursday, August 26, 2010 4:26 PM
To: Zakrzewski, Kristi (DNRE)
Subject: FW: Comments on the Preliminary Design Report for the 12th St Landfill

Attachments: 12th St LF - Pre Design Rpt for the 12th St Landfill (Oct-08).doc

12th St LF - Pre Design Rpt fo...

Paul Bucholtz
MDNRE-Superfund
517-373-8174

-----Original Message-----
From: Bucholtz, Paul
Sent: Friday, December 12, 2008 10:58 AM
To: berkoff.michael@epa.gov
Cc: Bradley, John
Subject: Fwd: Comments on the Preliminary Design Report for the 12th St Landfill

Michael,

These are our comments focused on Sections 8.1 through 8.4 of the report. Let em know if you want to discuss in detail.

Thanks

Paul Bucholtz
Environmental Quality Analyst
Remediation and Redevelopment Division
517-373-8174

Comments on the Preliminary Design Report for the 12th St Landfill

These comments do not represent a complete review of the "Preliminary Design Report for the 12th St Landfill" document (October, 2008) (report) and focus only on the groundwater monitoring portion of the "Long-Term Environmental Monitoring" section (i.e., sections 8.1 through 8.4) of the report.

8.1 Groundwater Monitoring Network and 8.4 Groundwater Monitoring Program
The reference in Section 8.1 identifying the groundwater sample analytical parameter list (i.e., Table 4-2 in the PSVP in Appendix D) is not consistent with the tables included in section 8.4. **The Tables in Appendix D should reference the Target Compound and Target Analyte Lists (TCL/TALs) or specifically identify the analytes in these lists.**

The three deep monitoring well locations proposed to be paired with three piezometers are identified as MW-101, MW-103, and MW-107. The locations identified on Figure 3-2 for installation of the piezometers are inconsistent with this text. This inconsistency should be addressed.

8.2.2 Vertical Aquifer sampling
Vertical profiling is proposed to be performed at 10 foot intervals to a depth of 40 feet below the water table. In recognition of the site-specific geology, the proposed sampling technology, as well as the nature of and the distance from contaminant sources, **the maximum recommended sampling interval at this site is five feet.** Furthermore, samples should be collected whenever changes in hydraulic properties are observed, or when the driller notes a change in drilling conditions. **Vertical profiling should continue beyond 40 feet below the water table until contaminants are not detected above criteria, or contaminant indicators are not elevated for at least two consecutive intervals.**

The report includes the conceptual observation that "... *this landfill would be expected to produce* a plume that would be thick and diffuse." This is not supported by the existing data set and should not be included in the design report.

The specific method of vertical profiling (in addition to the technology type (i.e., Geoprobe)) should be identified in the design report.

From a plan view, the location of well/well nests for monitoring this landfill appear initially adequate, however the number of well monitoring points at these locations should not be predetermined. The report indicates that "The results of the field sampling and the field and laboratory analysis will be used to identify the zone that is representative of the highest concentrations of potential landfill constituents present..." The GSI monitoring well network must be designed to monitor both the highest concentrations and full distribution of hazardous substances that exceed applicable criteria in the aquifer at the area of compliance (716(10) of Part 201). **The monitoring points must include the interval or intervals that represent the highest concentrations of hazardous substances.** The report should be edited to include that "The results of the field sampling and the field and laboratory analysis will be used to identify the **zone or zones** that is representative of the highest concentrations of potential landfill constituents present..."

8.2.3 Monitoring Well Construction

It is indicated in the report that water table monitoring wells will be constructed with a 10 foot screen. Unless the variability of typical water levels (during sampling events) is expected to exceed 2 or 3 feet, **the water table wells should be constructed with a 7 foot screen with five feet below the normal groundwater level.**

8.2.4 Well Development

It is indicated in the report that the wells will be developed "... by surging and purging with a surge block and submersible pump system." It is not clear if it is intended to use both methods for the development of each well. Given the identified geology at this site, and in an effort to encourage the collection of representative samples, **development by surging and purging with a surge block is recommended** and should be identified as the preferred method in the report.

8.5 Groundwater Monitoring Program

In regard to the process for "reducing the frequency of monitoring and the analytical program", it must be recognized that the frequency of monitoring must be adequate to insure protection of human health and the environment consistent and compliant with Part 201. **It is uncertain whether and perhaps unlikely that groundwater sampling at a frequency of once every five years (at a site directly adjacent its discharge point) can be shown to meet the requirements of Part 201.**

It is indicated in the report that water levels will be recorded two weeks and one week before groundwater sampling, so as to avoid sampling water inappropriately affected by surface water flow toward the site. **Because of the close proximity between site wells and the river, it is appropriate to monitor water levels multiple times a week for the two weeks preceding sampling events and during the sampling event.** It is also advised to begin sampling the wells closest to the river first to avoid leaving the site in the middle of a sampling event due to unanticipated groundwater reversals.

Zakrzewski, Kristi (DNRE)

From: Bucholtz, Paul (DNRE)
Sent: Thursday, August 26, 2010 4:27 PM
To: Zakrzewski, Kristi (DNRE)
Subject: FW: RE: 12th Street Comments

Attachments: MDEQCommentLetter.pdf

MDEQCommentLett
er.pdf (297 KB)...

Paul Bucholtz
MDNRE-Superfund
517-373-8174

-----Original Message-----
From: Bucholtz, Paul
Sent: Friday, February 20, 2009 3:21 PM
To: Berkoff.Michael@epamail.epa.gov
Cc: King, Todd; jeff#032#keiser#032#
Subject: Fw: RE: 12th Street Comments

Michael,

Attached are DEQ comments on the Pre-Final Design. My comments do not necessarily incorporate some of the discussion from our phone call with the RPs, as Hill's appear to. I thought this format works for me as we were able to discuss the issues but not necessarily resolve any of them on the phone. I am coming from the prospective that our last call helped each of us to understand our positions on the issues better, but the document still needs some changes to address our concerns. We can discuss on Monday.

Thanks

>>> <Berkoff.Michael@epamail.epa.gov> 2/20/2009 11:42 AM >>>

Michael Berkoff
Remedial Project Manager
U.S. EPA Region 5
Superfund Division
Remedial Response Section #2
Phone:(312) 353-8983
Fax:(312) 582-5160

To   Michael Berkoff/R5/USEPA/US@EPA

cc
bcc
Subject   RE: 12th Street Comments
<Jeff.Keiser@CH2M.com>

02/17/2009 08:56 AM MST:
:

Subject
RE: 12th Street Comments

Here it is.

JK
-----Original Message-----
From: Berkoff.Michael@epamail.epa.gov
[mailto:Berkoff.Michael@epamail.epa.gov]
Sent: Tuesday, February 17, 2009 9:29 AM
To: Keiser, Jeff/MKE
Subject: Re: 12th Street Comments

no attachment

Michael Berkoff
Remedial Project Manager
U.S. EPA Region 5
Superfund Division
Remedial Response Section #2
Phone:(312) 353-8983
Fax:(312) 582-5160

<Jeff.Keiser@CH2
M.com>

02/16/2009 09:47 AM

To
Michael Berkoff/R5/USEPA/US@EPA

cc

Subject
12th Street Comments

Michael attached are our final comments on the 12th Street landfill. I left the action items in for tracking the information we are still expecting from RMT. Please give me a call to discuss.

Thanks JK

- Prefinal design comments.pdf

Paul Bucholtz
Environmental Quality Analyst
Remediation and Redevelopment Division
517-373-8174

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

JENNIFER M. GRANHOLM
GOVERNOR

STEVEN E. CHESTER
DIRECTOR

February 20, 2009

Mr. Michael Berkoff
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard (SRF-6J)
Chicago, Illinois 60604-3507

Dear Mr. Berkoff:

SUBJECT: Michigan Department of Environmental Quality Review of the Pre-Final Design Report for the 12th Street Landfill, Prepared by RMT, Dated January 2009

The Michigan Department of Environmental Quality (MDEQ) has reviewed RMT's response to comments for the preliminary design report and various portions of the Pre-Final Design Report. The following comments were prepared based on that review.

1. As a preliminary design report, the RMT information does not contain the level of detail that would be necessary to bid the project to a general contractor. Therefore, the MDEQ has assumed that RMT plans to work with a contractor with whom they have a close working relationship. The MDEQ requests that RMT provides additional information that will allow the agencies to evaluate the experience of the parties who will be involved in the design and building of this project. The MDEQ does not consider the document to be sufficiently detailed in the absence of such experience.

2. The design report and response to comments (Appendix O) indicate that the design is based on experience from similar sites. RMT's experience in designing similar projects at other sites is not presented within the document for agency review and should be provided. It is not clear at this time if the experience-based design assumptions used by RMT are appropriate given actual site conditions at the 12th Street Landfill. As such, a decision matrix may be useful in communicating how conditions at the 12th Street Landfill are similar to, or different from, site conditions from other sites on which this design is based.

3. **Surface Water Section**: The design currently utilizes a series of culverts to handle storm water. As such, some fairly significant damage may be caused to the cap when a larger rain event occurs beyond the design event. Areas in the vicinity of pipe inlets can be particularly susceptible to erosion during such events. Some basic contingency provisions to the design should be incorporated to address flows in excess of the design storm. Provisions to limit the potential for damage to the finished cap under these conditions should be addressed in the document.

4. **Gas Venting System**: RMT states in their response that "It has been our experience that this systematic assessment of site-specific gas generation rates cannot be accurately completed if the gas vents are open to disperse the accumulated and newly formed gasses to the atmosphere." It is not clear why a systematic assessment of gas generation

is required so the reason for this design assumption needs to be clarified. The risk of creating internal gas pressures that are potentially destabilizing to the cap material far outweigh the need to understand site-specific gas generation rates. The MDEQ feels it is very important that the system be operated in a valves open, passive venting configuration unless RMT can more clearly explain the benefits of operating in a valves closed configuration. Further, if it is the intention that the gas venting system be abandoned in the closed position at some point in the future, then the evaluation of the long-term fate of the gas venting system will require more robust analyses than described in the design report.

5. The document identifies several conditions (e.g., discharges to air, surface water, etc.) that would require permitting under normal circumstances. Although permits will not be required for this action, RMT will need to engage the permitting agencies through a Substantive Requirements Document process to ensure that the design is consistent with a permitted activity.

6. 8.2.2 - Vertical Aquifer sampling: Vertical profiling is proposed to be performed at ten-foot intervals to a depth of 40 feet below the water table. In recognition of the site-specific geology, the proposed sampling technology (i.e., the Geoprobe), mode of transport, as well as the nature of and the distance from contaminant sources, the maximum recommended sampling interval at this site is five feet. Vertical profiling should continue beyond 40 feet below the water table until contaminants are not detected above criteria, or contaminant indicators are not elevated for at least two consecutive intervals.

7. Because the polychlorinated biphenyl (PCB) mode of transport is expected to be different than that of volatile organic compounds (VOCs), the samples collected during the vertical aquifer sampling should be analyzed for turbidity and PCBs.

8. From a plan view, the location of well/well nests for monitoring this landfill appears initially adequate; however, the number of well monitoring points at these locations should not be predetermined. The report indicates that "The results of the field sampling and the field and laboratory analysis will be used to identify the zone that is representative of the highest concentrations of potential landfill constituents present...." The groundwater/surface water interface monitoring well network must be designed to monitor both the highest concentrations and full distribution of hazardous substances that exceed applicable criteria in the aquifer at the area of compliance [716(10) of Part 201[1]]. The monitoring points must include the interval or intervals that represent the highest concentrations of hazardous substances.

9. 8.2.3 - Monitoring Well Construction: Monitoring wells should be designed to monitor five-foot intervals of the aquifer. The water table wells should be constructed with a seven-foot screen with five feet below the normal groundwater level.

10. 8.2.4 - Well Development: Given the identified geology at this site, and in an effort to encourage the collection of representative samples, development by surging and purging with a surge block driven by the drilling rig is recommended and should be identified as the preferred method in the report.

---

[1]Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

11. 8.5 - Groundwater Monitoring Program: It is indicated in the report that water levels will be recorded two weeks and one week before groundwater sampling, so as to avoid sampling water inappropriately affected by surface water flow toward the site. Because of the close proximity between site wells and the river, it is appropriate to monitor water levels multiple times a week for the two weeks preceding sampling events and during the sampling event. It is also advised to begin sampling the wells closest to the river first to avoid leaving the site in the middle of a sampling event due to unanticipated groundwater reversals.

The following comments are based on the review of Drawings 1 through 8 and Appendix E (Specifications) as well as Section 6 (Design Components). The following comments are offered as examples of information that will further add to the clarity of the document.

12. **Sheet 3**: Additional information is necessary to understand the layout and design of the passive/active gas venting system. It appears possible that collection of gases from the midpoint and crown of the landfill may not adequately evacuate and control gases generated from the waste materials.

13. **Sheet 4**: It is very difficult to see the plan view layout of storm water handling piping on this figure. An additional sheet should be added to illustrate the storm water handling system, including the locations of the toe drain discharge points.

14. This sheet references Detail 1/5 to show the typical toe drain pipe. On Sheet 5, Detail 1/5 does not show the cross section of the toe drain pipe. It shows the cross section of the Final Cover and Native Soil Tie-In as well as the toe drain discharge piping; not the actual toe drain.

15. It is unclear how storm water will be handled on the eastern toe of the landfill that does not have an access road (area that contains the toe drain).

16. **Sheets 5 and 6**: Details on these sheets could be improved by adding specific H/V (horizontal/vertical) notations and pipe sloping requirements on all details illustrating slopes and piping.

17. **Sheet 5**: A design slope has not been indicated for the toe drain discharge pipes.

Appendix E

18. The specifications included in Division 1 appear to be deficient to identify how pre-work submittals for specified materials and equipment will be evaluated and approved.

19. Additionally, typical sections on Division 1 that identify general requirements related to permits (storm water discharge, air emissions, soil erosion, and sedimentation control, etc.), housekeeping, site control and layout, and work planning have not been included.

20. Specifications describing the necessary air monitoring during construction have not been included.

21. The specifications reference the Engineer, Owner, Bidder, Contractor, Resident Project Representative, etc. These terms are not defined in the specifications.

22. **Section 02315, Page 02315-2:** Elevations and plan and profile drawings of the existing utilities referenced should be included as reference documents to the specifications.

23. **Section 02320, Page 02320-2:** Section 01330 is referenced on this page. Section 01330 has not been included in the specification package.

24. **Section 02320, Page 02320-3:** The materials specified as "Select Clay Fill" are not referenced on the Drawings. The Drawings use the term "Proposed Clay." It is unclear if these two materials are intended to be one and the same.

25. Requirements for all materials in this section should include verification that the materials are free of VOCs, semi-volatile organic compounds (SVOCs), PCBs, pesticides, metals, etc., by means of declaration from source provider or analytical data.

26. **Section 02522:** This section does not include adequate details of well construction (vertical screen placement, sand and gravel pack sizing, well drilling method, well development method, etc.).

27. **Section 02618, Page 02618-1:** Section 01330 is referenced on this page. Section 01330 has not been included in the specification package.

28. Item 1.3 references delivery and storage of a pump. It is unclear where the pump will be implemented.

29. **Section 02911:** Requirements for all materials in this section should include verification that the materials are free of VOCs, SVOCs, PCBs, pesticides, metals, etc., by means of declaration from source provider or analytical data.

30. **Appendix J - Draft Operation and Maintenance Plan:** This section should include examples of inspection forms to be used.

Should you have any questions or comments regarding our comments on the Pre-Final Design, please do not hesitate to contact me.

Sincerely,

Paul Bucholtz
Project Manager
Specialized Sampling Unit
Superfund Section
Remediation and Redevelopment Division
517-373-8174

cc: Ms. Daria W. Devantier, MDEQ
Mr. John Bradley, MDEQ
Ms. Kristi Zakrzewski, MDEQ

Zakrzewski, Kristi (DNRE)

From: Bucholtz, Paul (DNRE)
Sent: Thursday, August 26, 2010 4:29 PM
To: Zakrzewski, Kristi (DNRE)
Subject: FW: 12th Street Landfill sampling approach - Final Email

Kristi, I think this represents the last exchange regarding GW issues.

Hope this helps

Paul Bucholtz

MDNRE-Superfund

517-373-8174

From: John Rice [mailto:John.Rice@rmtinc.com]
Sent: Monday, March 02, 2009 3:12 PM
To: Bradley, John
Cc: Berkoff.Michael@epamail.epa.gov; Bucholtz, Paul; Huibregtse, Kathy; Amstadt, Mike; jennifer.hale@weyerhaeuser.com; martin.lebo@weyerhaeuser.com
Subject: Re: 12th Street Landfill sampling approach

John
We have been authorized by Weyerhaeuser to complete the design report. I will make the changes that were outlined in my previous email and will include a contingency that the vertical profiling will continue beyond 40 feet, if a plume is identified. I appreciate your comments.
best regards,
--John

John M Rice, PE
Senior Hydrologist
RMT, Inc.
744 Heartland Trail
Madison, WI 53717

(608) 662-5235
john.rice@rmtinc.com

>>> "John Bradley" <bradleyj1@michigan.gov> 2/18/2009 9:05 AM >>>

John

Thanks for the quick response. I've just returned to the office after being away, so I wasn't able to meet your proposed time frame for discussion.

Your proposals look good. To be consistent with Part 201, I would recommend that vertical profiling continue beyond 40 feet if a plume is identified.

I am available for much of this week if you would like to conference on these issues. Conferencing is usually coordinated through the PMs.

I appreciate your attention to these matters and look forward to working with you.

John Bradley
Senior Geologist
State of Michigan
(517) 335-3146

>>> "John Rice" <John.Rice@rmtinc.com> Feb 12, 2009 6:03 PM >>>

John

Thanks for taking the time yesterday to providefeedback on proposed changes in the design document for the 12th Street Landfill. In particular, we appreciated the background you provided on your experiences with sites in the region. We are in the process of incorporating your suggestions into our final design report. In order
to speed the review process, we would like your feedback on our approach
to addressing your comments on vertical aquifer sampling, presented below.

- We propose to perform vertical sampling at depth intervals of 5
feet from the water table to a depth of 40 feet below the water table
- *We would include turbidity in sampling each interval, along* with other indicators included in the work plan. (pH, conductivity and
Dissolved oxygen)
- We would perform analysis of PCBs in the groundwater at each of
the seven downgradient boring locations at the water table, 5 feet, 10 feet and 20 feet below the water table and at significant changes in the
formation and/or significant changes in field parameters, particularly turbidity. Thus we would have a minimum of four PCB samples and nine sampling depths with which to characterize vertical gradient in groundwater properties for well screen placement.

We would like to have a technical discussion on this approach to make sure that it will meet your requirements for decision-making. Would

you
have time for a conference call tomorrow from 8:00 - 10:30 EST or 1:30
-
4:30 EST to discuss with Weyerhaeuser and RMT technical staff?

thanks
--John

John M Rice, P.H., P.E.-WI, Senior Hydrologist
RMT| 744 Heartland Trail Madison WI 53717
Direct:608.662.5235 |Fax: 608.831.3334
CREATING BALANCE